

## **AMENDMENTS TO THE ABSTRACT**

Please add the following abstract to the end of the application:

### **ABSTRACT**

A signal processing system is disclosed which is implemented using Gaussian Mixture Model (GMM) based Hidden Markov Model (HMM), or a GMM alone, parameters of which are constrained during its optimization procedure. Also disclosed is a constraint system applied to input vectors representing the input signal to the system. The invention is particularly, but not exclusively, related to speech recognition systems. The invention reduces the tendency, common in prior art systems, to get caught in local minima associated with highly anisotropic Gaussian components – which reduces the recognizer performance – by employing the constraint system as above whereby the anisotropy of such components are minimized. The invention also covers a method of processing a signal, and a speech recogniser trained according to the method.